apparatus. The spermatophore breaks up and becomes disaggregated; the spermatozoids are then set at liberty, and spread in the copulatory branch, the copulatory vesicle, and especially the ovigerous channel, where at this moment, and at this moment only, we find them in great quantities and full of life. By the action of the vibratile cilia which line the inner wall of the ovigerous channel, the spermatozoids go to meet the ova; and it is in the commencement of this channel that fecundation appears to be effected.

During the preludes of copulation the two individuals project their dart, which usually traverses through and through the walls of the visceral cavity, where it may be found long afterwards among the viscera, slightly altered. The dart, contrary to the opinion expressed by a malacologist, when once detached, is speedily reproduced. Within a few hours of the copulation its rudiments may be perceived; and a few days suffice for its complete reproduction. We may therefore, in some cases, from the degree of development of this calcareous style, judge approximately of the time that has elapsed since the last sexual intercourse.—*Comptes Rendus*, Oct. 30, 1871, p. 1059.

On the Persistence of Caryophyllia cylindracea, *Reuss, a Cretaceous Coral, in the Coral-fauna of the Deep Sea.* By P. Martin Duncan, M.B. Lond., F.R.S., F.G.S., Prof. of Geology in King's Coll. Lond.

The author first referred to the synonyms and geological distribution of *Caryophyllia cylindracea*, Reuss, which has hitherto been regarded as peculiar to the White Chalk, and as necessarily an extinct form, inasmuch as it belonged to a group possessing only four cycles of septa in six systems, one of the systems being generally incomplete. The distribution of the *Caryophylliæ* of this group in the Gault and the Upper Chalk, the Miocene, and the Pliocene was noticed, and also that of the species with the incomplete cycle. The falsity of this generalization was shown to be proved by the results of deep-sea dredging off the Havannah, under Count Pourtales, and off the Iberian peninsula under Dr. Carpenter and Mr. Gwyn Jeffreys. The former dredged up *Caryophyllia formosa* with four complete cycles; and the latter obtained, from depths between 690 and 1090 fathoms, a group of forms with four complete and incomplete cycles. This group had a Cretaceous facies; one of the forms could not be differentiated from *Caryophyllia cylindracea*, Reuss; and as a species of the genus *Bathycyathus* was found at the same time, this facies was rendered more striking. The representation of the extinct genera *Trochosmilia*, *Parasmilia*, *Synhelia*, and *Diblasus* by the recent *Amphiheliæ*, *Paracyathi*, and *Caryophylliæ* was noticed; and it was considered that as the Cretaceous forms throve under the same external conditions, some of them only being persistent, there must be some law which determines the life-duration of species like that which restricts the years of the individual. It was shown that deep-sea conditions must have prevailed within the limits of the diffusion of the ova of coral polyps somewhere on the Atlantic area ever since the Cretaceous period.—*Proc. Geol. Soc.* June 7, 1871.